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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,788	12/19/2001	Michael Thomas Swab	US 010648	3219
24737	7590	11/02/2004	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			STREGE, JOHN B	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,788

Applicant(s)

SWAB, MICHAEL THOMAS

Examiner

John B Strege

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/19/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/19/01, 2/6/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1-2, 5-9, 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blais et al. USPN 5,044,072 (hereinafter "Blais") in view of Suzuki USPN 6,028,303.

Claim 1 discloses, "in an automated printed circuit board assembly machine, a method for visualizing an item having physical features on a background, comprising the steps of: illuminating the item with electromagnetic radiation, including the physical features and the background, using an illumination source; forming an image of electromagnetic radiation reflected from the item, said image containing a characteristic defect depending on the type of item; and automatically filtering said reflected electromagnetic radiation to remove said characteristic defects from said image, whereby in said filtered image said characteristic defect is reduced and an improved contrast between the physical features and the background is produced."

Blais discloses a vision system apparatus for the registration or alignment of electrical components over pad areas of receptor members such as printed circuit boards (col. 1 lines 1-13). Blais further discloses lighting means 44, and 45 (figure 4) for illuminating the leads and the components to be aligned (col. 4 lines 32-40). An image is

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formed when electromagnetic radiation hits an object, and as Blais discloses that before filtering it can be of poor quality, sharpness, and fixed contrast which makes it difficult for the operator to visually distinguish between the leads and the pad areas, particularly in cases where there is a color contrast between the component and the pad member (col. 1 lines 27-37)(the problems of the image are read as defects in the image). To resolve these defects Blais discloses an adjustable polarizing light filter ring 46, which polarizes the image of the pad member (corresponding to the original formed image from the electromagnetic radiation) and is rotatably mounted to enable light contrasts to be adjusted in the visible reflection of the pad member as viewed by the observer, whereby the reflection of the pad areas can be lightened or darkened to produce a clearer visual contrast between the superimposed reflections of the component leads 24a and of the pad areas 27a (col. 4 lines 40-60). Examiner notes that as the filter is always in place this reads on the limitation of "automatically filtering" as the operator only adjusts the filter to improve the filtering, not to initiate it. However, in order to expedite the prosecution, Examiner admits that the filter used by Blais is a manually adjusted filter.

Suzuki teaches that using a manual polarizing filter requiring the user to manually rotate the filter can be tedious and awkward (col. 1 lines 40-57). In order to resolve this Suzuki discloses a polarizing filter control mechanism to automatically reduce the changing effects of reflected light (col. 2 lines 19-21).

Blais and Suzuki are analogous art because they are from the same field of endeavor of using a polarizing filter to control reflected light.

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At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Blais and Suzuki to obtain an automatically adjustable filter. The motivation for doing so would be to avoid the tediousness of having to manually adjust the filter. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Blais and Suzuki to obtain the invention as specified in claim 1.

Regarding claim 2, Blais discloses recognizing the pad areas and the leads (col. 4 lines 40-60).

Regarding claims 5-8, and 18, as discussed Blais discloses his invention for aligning electrical components on a printed circuit board, thus the components and the circuit board is illuminated, and the parts are mounted on the board.

Claim 9 is similar to claim 1, except claim 9 is an apparatus claim. As Blais discloses both an apparatus and method the same argument applied for the rejection of claim 1 applies equally to the rejection of claim 9.

Claims 13-17 are similar to claims 5-8 and 18, thus the same arguments applied for claims 5-8 and 18 apply equally to claims 13-17.

3. Claims 3-4, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blais et al. USPN 5,044,072 (hereinafter "Blais") in view of Suzuki USPN 6,028,303 and further in view of Okuda et al. USPN 5,249,356 (hereinafter "Okuda").

Regarding claim 3, Blais discloses lighting means, however does not explicitly disclose that a camera forms the filtered image. It is well known in the art of alignment

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to capture an image with a camera for alignment purposes in order carry out the alignment in a more accurate manner than can be done by a human observer. Okuda discloses one such system used for mounting electronic components in which a recognizing camera 21 is used for measuring the error amount of the position of an electronic component 6 (col. 1 lines 30-34).

Okuda is analogous to the combination described of Blais and Suzuki because they both deal with mounting electronic components on circuit boards.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Blais and Suzuki in the manner discussed and further combine the conventional teachings of Okuda to obtain an alignment system using a camera to form images of the components and leads. The motivation for doing so is that it would allow more accurate alignment than can be achieved from a human operator. Thus it would have been obvious to one of ordinary skill in the art to combine Blais, Suzuki, and Okuda to obtain the invention as specified in claim 3.

Regarding claim 4, the camera of Okuda is part of a computer vision system. (col. 1 lines 20-61).

Regarding claim 10, the camera of Okuda is part of a computer vision system (col. 1 lines 20-61).

Claim 11 is similar to claim 3, thus the same limitations used for the rejection of claim 3 apply equally to claim 11.

Claim 12 is similar to claim 4, thus the same argument used for the rejection of claim 4 applies equally to the rejection of claim 12.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 5,524,152 Bishop et al. Method of and apparatus for object or surface inspection employing multicolor reflection discrimination.

USPN 3,713,741 Sheehan, III Methods of and apparatus for locating solder faults.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B Strege whose telephone number is (703) 305-8679. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JS



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